CHAPTER 6: PERMITS AND CONSULTATIONS

The major laws, regulations, executive orders, and Department of Energy (DOE) orders that would apply to the proposed action are discussed in this chapter. This discussion includes the federal and state environmental permits required to construct and operate the proposed Spallation Neutron Source (SNS). In addition, it describes the consultations and actions required to protect cultural resources, endangered species, and migratory birds located on and in the vicinity of the alternative proposed SNS sites.

6.1 FEDERAL AND STATE REQUIREMENTS

The federal laws, executive orders, and state environmental laws that would be applicable to construction and operation of the proposed SNS are described in this section, along with the regulations that are used to implement the laws. The laws are presented according to whether they were passed by the U.S. Congress (federal) or the state legislatures in Tennessee, New Mexico, Illinois, or New York. The executive orders are all federal requirements issued by the President of the United States.

All of these requirements are presented in short tables under major subject headings, such as air quality, water quality, and waste management. The names of the laws and the formal numerical designations for the executive orders are presented in the second column. The third column contains the locations of the laws in the federal and state statutory codes. All of the indicated laws are considered to include subsequent amendments to them. The titles of the executive orders are also presented in this column. The fourth column contains the beginning citation numbers or a citation number range for the regulations that were developed to implement the laws.

The tables are followed by brief descriptions of the laws, executive orders, and regulations. Although some state environmental laws and regulations can be more stringent than their federal counterparts, their contents, especially at the regulatory level, must be at least as rigorous as the federal requirements. As a result, their content is mostly federal in origin. For this reason, the laws and regulations in this section are largely described at the federal level.

Many of the environmental laws and regulations require permits for performing certain activities that could be harmful to the environment. In addition, some require formal consultations with state and federal agencies about the potential effects of proposed actions on particular aspects of the environment. The permitting and consultation requirements applicable to the proposed action being assessed in this environmental impact statement (FEIS) are included within the descriptions of the laws that mandate them. The required permits and consultations are summarized in Table 6.1-1.

The Environmental Protection Agency (EPA) has primary, umbrella responsibility for enforcement of the environmental laws and regulations that apply to the proposed action, but other federal agencies such as the U.S. Army Corps of Engineers (USACOE) and the U.S. Fish and Wildlife Service (USFWS) are charged with consultation, permitting, or enforcement responsibilities that apply to specific aspects of the proposed action. The federal regulations

Table 6.1-1. Environmental permit and consultation requirements.

Activity/ Subject	Law	Requirements	Agency
Site Preparation	Clean Water Act (Section 404)	Section 404 Permit; State Aquatic Resource Alteration Permit (wetlands filling and stream alteration)	USACOE, TDEC, NMED, IEPA, NYSDEC
Stormwater Discharges	Clean Water Act	NPDES General Permit for Construction Activity; NPDES General Permit for Industrial Storm Water	EPA Region VI, TDEC, IEPA, NYSDEC
Wastewater Discharges	Clean Water Act	NPDES Permit for Industrial Activity (cooling water; groundwater interceptor system water)	EPA Region VI
Nonradioactive Air Emissions	Clean Air Act	Permits to construct new emissions sources; operating permits (natural gas boiler vents; laboratory hood vents; concrete batch plant)	TDEC, NMED, IEPA, NYSDEC
Radioactive Air Emissions	Clean Air Act	Permit to construct new emissions sources; NESHAP permit (Target Building and tunnel vent system stacks)	EPA Regions II, V, and VI; TDEC
Structures over 200 ft (61 m) in height	Federal Aviation Act	Permit for structures over 200 ft (61 m) in height (construction cranes, water tower)	FAA
Cultural Resources	Archaeological Resource Protection Act	Excavation or removal permit data recovery at LANL or BNL	DOE
	National Historic Preservation Act	Section 106 consultation	SHPO
Endangered Species	Endangered Species Act	Consultation	USFWS
Migratory Birds	Migratory Bird Treaty Act	Consultation	USFWS

FAA - Federal Aviation Administration; TDEC – Tennessee Department of Environment and Conservation; NMED – New Mexico Environment Department; IEPA – Illinois Environmental Protection Agency; NYSDEC – New York State Department of Environmental Conservation; SHPO - State Historic Preservation Officer.

relating to worker safety are enforced by the Occupational Safety and Health Administration (OSHA). Other requirements potentially applicable to the proposed action are administered by the Federal Aviation Administration (FAA).

The EPA has delegated most of its authority to enforce regulations to the states, although authority for some regulatory areas in some states is retained by the agency. Most of the state enforcement authority is lodged with the primary state environmental regulatory agencies. In Tennessee, New Mexico, Illinois, and New

York, these agencies are, respectively, the Tennessee Department of Environment and Conservation (TDEC), New Mexico Environment Department (NMED), Illinois Environmental Protection Agency (IEPA), and New York State Department of Environmental Conservation (NYSDEC). Some enforcement authority, especially with regard to public water supplies and sanitary waste, is lodged with the state and local health departments.

6.1.1 AIR QUALITY

		Citation	
Jurisdiction	Statute	Statutes	Regulations
Federal	Clean Water Act	33 USC 1251 et seq.	40 CFR 110-136, 433-459
Tennessee	Tennessee Water Quality Control Act	TCA 69-3-101 et seq.	TCRR 1200-4-1 to 5, 7, 10-11
New Mexico	New Mexico Water Quality Control Act	NMSA 1978, Sections 74-6-4 et seq.	20 NMAC 6.1
Illinois	Environmental Protection Act	415 ILCS 5/11-13	35 Ill. Adm. Code 301
New York	New York State Environmental Conservation Law	Article 17	6 NYCRR 700-758

The Clean Air Act (CAA) is intended to protect and enhance the quality of the nation's air resources. Section 118 of the CAA places requirements on each federal agency that has jurisdiction over properties and facilities that might result in the discharge of air pollutants. Under this section, the agency must comply with all federal, state, interstate, and local requirements with regard to the control and abatement of air pollution.

This law requires the EPA to establish National Ambient Air Quality Standards (NAAQS), as necessary, to protect public health from any known or anticipated adverse effects of a regulated pollutant (42 USC 7409), while allowing an adequate margin of safety. It also requires the establishment of national standards of performance for new or modified stationary sources of atmospheric pollutants (42 USC 7411) and requires the evaluation of specific emission increases to prevent a significant deterioration in air quality (42 USC 7470). Hazardous air pollutants, including radionuclides, are regulated separately (42 USC 7412). Air emissions are regulated by the EPA in 40 CFR 50 through 99. In particular, radionuclide emissions are regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP) program (see 40 CFR 61).

The EPA has overall regulatory authority under the CAA, but this authority has been delegated to states that have established air pollution control programs approved by EPA. The state environmental regulatory agencies in Tennessee, New Mexico, Illinois, and New York have approved air programs. However, this approval does not extend to all the air regulations applicable to the national laboratories.

The EPA has retained regulatory authority over the new emission source performance standards (40 CFR 60, Subpart Db) in New York. In addition, EPA has retained regulatory authority over the NESHAP for radionuclides in New Mexico, Illinois, and New York. In Tennessee, EPA has delegated this authority to the Tennessee Department of Environment and Conservation (TDEC). Furthermore, in Tennessee and New Mexico, EPA has retained regulatory authority relating to the stratospheric ozone protection provisions in Title VI of the CAA amendments of 1990.

Permits to construct and operate new air emissions sources would be required for new nonradiological sources used during construction and operation of the proposed SNS. These new sources would potentially include the vents for seven natural gas boilers in the building heating system, laboratory hood vents (nonradioactive use), and a concrete batch plant. These permits would contain operating conditions and emissions limitations for air pollutants.

Permits for construction of new radioactive emission sources and NESHAP permits for radionuclide emissions would be required for the target building and the linac tunnel ventilation stacks at the proposed SNS. In addition, such permits would be required for any laboratory hood vents that have the potential to emit radionuclides to the atmosphere during operation of the proposed SNS. As described in 40 CFR 61.96, if the effective dose equivalent caused by all emissions from facility operations is projected to be greater than one percent of the 10 mrem per year NESHAP standard, an application for approval to construct under 40 CFR 61.07 would have to be filed. With prior EPA approval, 40 CFR 61.96 allows DOE to use methods other than the standard EPA methods for estimating the radionuclide source terms used in calculating the projected dose. The current annual NESHAP report for the site selected in the Record of Decision for construction of the SNS would be modified to include radioactive emissions from the SNS.

6.1.2 WATER QUALITY

		Citation	
Jurisdiction	Statute	Statutes	Regulations
Federal	Clean Air Act	42 USC 7401 et seq.	40 CFR 50-99
Tennessee	Tennessee Air Quality Act	TCA 53-3408 et seq.	TCRR 1200-3
New Mexico	New Mexico Air Quality Control Act	NMSA 1978, Sections 74-1-1 et seq.	20 NMAC 2.1
Illinois	Environmental Protection Act	415 ILCS 5/10, 27, 39, and 39.5	35 Ill. Adm. Code 201
New York	New York State Environmental Conservation Law	Article 19	6 NYCRR 200 and 380

The Clean Water Act (CWA) was enacted to restore and maintain the chemical, physical, and biological integrity of the nation's water. It prohibits the discharge of toxic pollutants in toxic amounts to navigable waters of the United States. (Section 101). Section 313 of the CWA requires all branches of the federal government engaged in any activity that might result in a discharge or runoff of pollutants to surface waters to comply with federal, state, interstate, and local requirements. In addition to setting water quality standards for the nation's waterways, the CWA sets guidelines and limitations (Sections 301–303) for effluent discharges from point sources and provides authority (Sections 401–402) for the EPA to implement the National Pollutant Discharge Elimination System (NPDES) permitting program under 40 CFR 122.

The EPA has delegated primary enforcement authority for the CWA and the NPDES permitting program to the state environmental regulatory agencies in Tennessee, Illinois, and New York. In New Mexico, EPA has not delegated full CWA enforcement authority to the state environmental regulatory agency. The NPDES permits for the Los Alamos National Laboratory (LANL) are issued by EPA Region VI in Dallas, Texas. However, NMED does perform limited compliance auditing and monitoring at LANL through a Section 106 water quality agreement with EPA.

The foregoing state and federal agencies have issued NPDES permits covering current industrial wastewater discharges at Oak Ridge National Laboratory (ORNL), LANL, Argonne National Laboratory (ANL), and Brookhaven National Laboratory (BNL). These permits establish effluent limitations for specific chemical pollutants, limitations on physical parameters such as water temperature and flow, and monitoring requirements. The cooling water discharge from the proposed SNS would need to be included under the laboratory NPDES permit for discharges associated with industrial activities.

Process wastewater from the proposed SNS would be treated in on-site waste treatment facilities, and the effluent from the treatment process would be discharged to surface waters. The Atomic Energy Act of 1954 (AEA) regulates the discharge to surface waters of radionuclides from source, by-product, and special nuclear materials. However, the proposed SNS is an accelerator facility, and the discharge of accelerator-produced radionuclides to surface waters is not regulated under this statute. These discharges are regulated by EPA [CWA (40 CFR 122) and NPDES program] or authorized state programs under the CWA. The proposed SNS wastewater containing accelerator-produced radionuclides would be treated in facilities that also treat radionuclides from source, by-product, or special nuclear materials, such as reactor waste. At the outfalls for these treatment facilities, it would be impossible to determine whether a particular radionuclide in the discharge came from an accelerator or a reactor, which raises the issue of whether the discharge would be regulated under the AEA or the CWA. A possible approach would be to comply with the more restrictive discharge limits under the CWA, which are administered by EPA and the states.

There is no limit on the quantity or concentrations of radionuclides that can be discharged to surface waters under the current AEA requirements, as long as it can be shown that such discharges do not result in radiation doses in excess of established limits. The CWA and state rules establish limits on concentrations of radionuclides in effluents discharged to unrestricted areas and quantity limits on discharges to certain types of systems, such as sanitary sewer systems. However, DOE and ORNL have historically questioned the State of Tennessee's authority to regulate AEA-exempt radionuclide discharges to surface waters. This approach to compliance with respect to the proposed SNS waste treatment discharges would bring this controversy into sharper focus at ORNL and potentially at the other three national laboratories (DeVore 1997:1).

Another approach to this regulatory issue would be to proceed with compliance under a radionuclide-by-radionuclide scenario. Radionuclides from source, by-product, and special nuclear materials (for example, ^{137}Cs and ^{90}Sr) would be regulated under the AEA discharge

rules. Accelerator-produced radionuclides, such as ^{7}Be, would be regulated under EPA or state rules. Radionuclides produced by both accelerator and nonaccelerator sources would be regulated under EPA or state rules. This regulation of common products in the treatment plant discharges would be the only departure from current practice (DeVore 1997:2).

Section 402(p) of the CWA authorizes the establishment of regulations to control the issuance of NPDES permits for stormwater discharges. These permits apply to discharges of stormwater from construction activities and point source discharges of stormwater associated with industrial activity. An NPDES general permit covering stormwater discharges from construction activity would be required for construction of the proposed SNS. In addition, an approved stormwater pollution prevention and erosion control plan specific to the construction activity would be required. An NPDES general permit for point-source stormwater discharges associated with industrial activity would be required for operation of the proposed SNS. The national laboratory selected for construction of the proposed SNS would be required to revise its site-wide Storm Water Pollution Prevention Plan to include the new stormwater point source on the sediment retention basin at the proposed SNS.

Section 316(a) of the CWA authorizes the Regional Administrator of EPA to set alternative effluent limitations on the thermal component of industrial discharges, if the owner/operator demonstrates that the proposed thermal effluent limitations are more stringent than necessary to ensure the protection and propagation of a balanced population of fish, shellfish, and wildlife in or on a body of water into which the discharge is to be made. In support of its request for a Section 316(a) exception, the owner/operator must submit with its NPDES permit application scientific documentation showing that the expected heated effluent will not result in appreciable harm to the indigenous aquatic community of the receiving water body. This scientific documentation is called a Section 316(a) Demonstration.

A Section 316(a) Demonstration may be required for the thermal component of the proposed SNS cooling water discharge. If required at ORNL, ANL, or BNL, this satisfactory demonstration would be made to the state environmental regulatory agencies. If required at LANL, the demonstration would be made to EPA Region VI. In all cases, demonstration oversight would be provided by EPA.

Section 404 of the CWA requires the issuance of a Section 404 permit for discharge of dredge or fill material into the waters of the United States. This includes the filling of wetland areas by construction projects. The authority to implement these requirements and issue the permits has been given to the USACOE. In addition, a state environmental regulatory agency may require a state permit to physically alter waters of the state, which usually include streams and wetlands. For example, in Tennessee, TDEC requires an Aquatic Resource Alteration Permit (ARAP) to alter the waters of the state. Section 401 of the CWA requires certification that discharges from construction or operation of facilities, including discharges of dredge and fill material into navigable waters, will comply with applicable water quality standards. This certification is normally granted by the state regulatory agencies and is a prerequisite for receiving a Section 404 permit and state permits such as the Tennessee ARAP.

When a federal construction project would result in the filling of a wetland area, the issuance of a Section 404 permit is usually contingent upon approval of a wetlands mitigation plan by the USACOE.

Construction activities would result in the partial filling of a wetland area overlapping the site of the sediment retention basin associated with the proposed SNS at ORNL. If the site in ANL were selected for construction of the proposed SNS, several wetland areas in ANL would be filled. These actions would require a Section 404 permit and a Tennessee ARAP or a similar state permit from IEPA. Furthermore, Section 404 and state permitting may be required for wastewater discharge conveyances, outfall structures, and the bridging of small streams, especially with regard to road improvements and the piping of retention basin discharge to White Oak Creek at ORNL and the Peconic River at BNL.

The primary objective of the Safe Drinking Water Act (SDWA) is to protect the quality of public water supplies and all sources of drinking water. The implementing regulations are administered by EPA or authorized state environmental regulatory agencies, and they establish standards applicable to public water systems. These standards include maximum contaminant levels (chemicals and radioactivity) in public water systems, which are defined as water systems that serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents. Other programs established by the SDWA include the Sole Source Aquifer Program, the Wellhead Protection Program, and the Underground Injection Control Program.

		Citation	
Jurisdiction	Statute	Statutes	Regulations
Federal	Safe Drinking Water Act	42 USC 300(F) et seq.	40 CFR 141-143
Tennessee	Tennessee Safe Drinking Water Act	TCA 68-221-701 et seq.	TCRR 1200-4-6, 1200-4-9, and 1200-5-1
New Mexico	Environmental Improvement Act	NMSA 1978, Section 74-1-8	20 NMAC 7.1
Illinois	Environmental Protection Act	Ill. Rev. Stat. 1981, ch 111 1/2, pars. 1001 et seq.	35 Ill. Adm. Code 601
New York	New York State Public Health Law	Sections 201, 206, and 225	10 NYCRR 5

EPA has delegated regulatory enforcement authority under the SDWA to state regulatory agencies in Tennessee, New Mexico, Illinois, and New York. In most cases, compliance with public water supply and contaminant monitoring requirements is overseen by state and local health departments. During operation of the proposed SNS, the levels of specific radioactive and chemical contaminants in the potable water system would have to be monitored on a regular basis to ensure cross-connection control and protection of human health.

Jurisdiction	Order No.	Title
Federal	Executive Order 12903	Energy Efficiency and Water Conservation at Federal Facilities

Executive Order 12903 requires federal agencies to develop and implement a program for the conservation of energy and water resources.

6.1.3 HAZARDOUS MATERIALS STORAGE AND HANDLING

Jurisdiction	Statute	Citation	
		Statutes	Regulations
Federal	See Section 6.2.2		
New York	New York State Environmental Conservation Law	Article 40	6 NYCRR 595-599

Improper storage and handling of hazardous materials poses serious risks to human health, public safety, and the environment. The federal and state requirements for hazardous materials storage and handling are aimed at minimizing these risks by identifying materials considered to be hazardous and establishing standards for hazardous materials storage facilities, storage and handling operations, response to releases, release reporting, and corrective action. The hazardous materials storage and handling activities conducted during construction and operation of the proposed SNS would be required to comply with the applicable portions of these requirements.

6.1.4 WASTE MANAGEMENT

The treatment, storage, or disposal (TSD) of hazardous and nonhazardous solid waste is governed by the Resource Conservation and Recovery Act (RCRA). Under Section 3006, a state that seeks to administer and enforce a hazardous waste program pursuant to RCRA may apply for EPA authorization of its program. The environmental regulatory agencies in the potential host states for the proposed SNS have received authorization from EPA to implement hazardous waste management programs.

Jurisdiction	Statute	Citation	
		Statutes	Regulations
Federal	Resource Conservation and Recovery Act	42 USC 6901 et seq.	40 CFR 240-282
Tennessee	Tennessee Hazardous Waste Management Act	TCA 68-212-101 et seq.	TCRR 1200-1-11
New Mexico	New Mexico Hazardous Waste Act	NMSA 1978, Section 74-1-6 et seq.	20 NMAC 4.1
Illinois	Environmental Protection Act	415 ILCS 5/13. 22.4, and 27	35 Ill. Adm. Code 700
New York	New York State Environmental Conservation Law	Article 27	6 NYCRR 370

RCRA and state hazardous waste regulations contain criteria for identifying hazardous wastes, requirements for hazardous waste transportation and handling, and requirements for the TSD of hazardous waste. The regulations imposed on a generator or TSD facility vary according to the types of hazardous waste generated, quantities of waste generated, characteristics of the TSD methods applied, and the attributes of the facilities used to manage the wastes. A RCRA permit is required for facilities that store hazardous waste on-site for more than 90 days, treat it, or dispose of it. Generators may be allowed to treat hazardous wastes on-site without a RCRA permit, provided that all applicable requirements are met.

The construction and operation of the SNS would generate hazardous waste and mixed waste. Mixed waste is a waste that is both hazardous and radioactive. Hazardous wastes would be accumulated at the SNS site for up to 90 days. The 90-day hazardous waste

accumulation areas would be managed in compliance with applicable federal (RCRA) and state hazardous waste regulations. Hazardous waste would be transported to a permitted hazardous waste storage or treatment facility at the host site within the 90-day accumulation time limit.

Jurisdiction	Title	Statute Citation
Federal	The Federal Facility Compliance Act	42 USC 6921 et seq.

The Federal Facility Compliance Act (FFCA) was enacted on October 6, 1992. This legislation made federal facilities liable for federal/state fines and penalties for the illegal management of mixed waste, particularly its storage beyond established time limits. However, this law temporarily postpones the imposition of fines and penalties for mixed waste storage violations at DOE sites because sufficient treatment capacity for these wastes does not exist on a national scale. The postponement allows DOE to prepare plans for developing treatment capacity for the mixed waste generated or stored at each of its facilities. After consultation with other affected states, each plan must be approved by a facility's host state or the EPA, and the responsible regulatory agency must issue a consent order requiring compliance with the plan. Under the FFCA, DOE is not subject to fines and penalties for storage prohibition violations as long as it is in compliance with an approved plan and consent order and meets all other applicable regulations.

The FFCA would apply to any new mixed waste stream generated during construction or operation of the proposed SNS. DOE would be required to provide the state environmental regulatory agencies with information on the generation of these new mixed waste streams, and the mixed wastes in these streams would have to be managed in compliance with all applicable requirements.

Jurisdiction	Title	Statute Citation
Federal	Pollution Prevention Act	42 USC 13101 et seq.
Tennessee	Tennessee Hazardous Waste Reduction Act	TCA 68-212-301
New York	New York State Environmental Conservation Law	Article 27

The Pollution Prevention Act establishes a national policy for waste management and pollution control that focuses first on source reduction, followed sequentially by environmentally safe recycling, treatment, and disposal. Disposal or releases to the environment should occur only as a last resort. In response, DOE has committed to participation in the U.S. EPA 33/50 Pollution Prevention Program (Superfund Amendments and Reauthorization Act, Section 313). The goal for facilities already involved in Section 313 compliance was to achieve a 33 percent reduction in the release of 17 priority chemicals by 1997, using 1993 baseline quantities. On August 3, 1993, President Clinton issued Executive Order 12856 (see below), which resulted in expansion of the 33/50 Pollution Prevention Program. Under the expanded program, DOE must reduce its total releases of all toxic chemicals 50 percent by December 31, 1999. In addition, DOE is requiring each of its sites to establish site-specific goals to reduce the generation of all waste types.

Jurisdiction	Order Number	Title
Federal	Executive Order 12856	Right-to-Know Laws and Pollution Prevention Requirements

Executive Order 12856 requires all federal agencies to reduce the toxic chemicals entering any waste stream. This order also requires federal agencies to (1) report toxic chemicals entering waste streams; (2) improve emergency planning, response, and accident notification; and (3) encourage clean technologies and the testing of innovative pollution prevention technologies.

Jurisdiction	Order Number	Title
Federal	Executive Order 13101	Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition

Executive Order 13101 states a national policy preference for pollution prevention (reducing the generation of waste at its source) over waste recycling, treatment, and disposal. If pollution prevention is not feasible, wastes should be recycled or treated in an environmentally safe manner. Disposal should be used only as a last resort.

The Secretary of Energy is required to incorporate waste prevention and recycling into daily DOE operations. Markets for recovered materials must be expanded through greater DOE preference and demand for products made from such materials. In addition, DOE must implement cost-effective procurement programs that favor the purchase of environmentally preferable products and services. These are products and services with a lesser or reduced effect on human health and the environment compared to competing products and services used for the same purposes.

This executive order would require the incorporation of waste prevention and recycling into construction and operation of the proposed SNS, consistent with the demands of efficiency and cost-effectiveness. Procurement programs would be implemented to favor the purchase of environmentally preferable products and services, which would include products made from recovered materials.

Jurisdiction	
Tennessee	Potential Rulemaking on Accelerator-Produced Radioactive Wastes and Products

Although no such rules have been formally proposed, TDEC has indicated to DOE that the State of Tennessee intends to eventually promulgate regulations applicable to the management of radioactive products and wastes produced by accelerator facilities. Because the proposed SNS facility would be an accelerator-based neutron research facility, many of these potential regulations would be applicable to its operations. If the ORNL site is selected for construction of the SNS, DOE will meet all state regulatory requirements applicable to radioactive products and wastes produced by accelerator facilities such as the proposed SNS.

6.1.5 FLOODPLAINS AND WETLANDS

Jurisdiction	Order Number	Title
Federal	Executive Order 11988	Floodplain Management

Executive Order 11988 requires federal agencies to establish procedures to ensure that the potential effects of flood hazards and floodplain management are considered for any action undertaken in a floodplain and that floodplain impacts be avoided to the extent practicable.

Jurisdiction	Order Number	Title
Federal	Executive Order 11990	Protection of Wetlands

Executive Order 11990 requires government agencies to avoid any short- and long-term

adverse impacts on wetlands wherever there is a practicable alternative. It requires federal agencies to identify potential impacts to wetlands resulting from proposed activities and to minimize these impacts. Where impacts cannot be avoided, action must be taken to mitigate the damage by repairing or replacing the wetlands with an equal or greater amount of a man-made wetland as much like the original wetland as possible. The current federal policy is for no net loss of wetlands as a result of federal activities.

Jurisdiction	
Federal	See Sections 6.1.2 and 6.2.1

The discharge of dredge or fill material into wetlands is regulated at the federal level under Section 404 of the CWA and at the state level. The relevant requirements and permits are discussed in Section 6.1.2. In addition, DOE has promulgated its own regulations pertinent to floodplains and wetlands management. These regulations are cited in Section 6.2.1.

6.1.6 WILDLIFE AND ECOSYSTEMS

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Endangered Species Act	16 USC 1531 et seq.	50 CFR 17, 23–24, 81, 217, 220–222, 225–227, 402, 424, 450–453

The Endangered Species Act is intended to prevent the further decline of endangered and threatened species and to restore these species and their habitats. The Act is jointly administered by the U. S. Department of Commerce (National Marine Fisheries Service) and the U.S. Department of the Interior (DOI) (USFWS). Section 7 requires consultation with the USFWS and the National Marine Fisheries Service to determine if endangered and threatened species or their critical habitats are in the vicinity of a proposed federal action.

The states also have various laws and regulations aimed at protecting endangered species, threatened species, other species of concern, and their habitats. Under these requirements, the states have issued lists of protected species that are state-level counterparts of the federal lists, but often with additional protection and concern categories that reflect state priorities.

The alternative proposed SNS sites and adjacent lands have been surveyed at the reconnaissance level for endangered, threatened, and special-concern floral and faunal species. These surveys encompassed species listed by the federal government, Tennessee, New Mexico, Illinois, and New York. In addition, the survey areas were evaluated for the presence or absence of potential habitats for these species. DOE has initiated informal consultations with the USFWS.

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Migratory Bird Treaty Act	16 USC 703 et seq.	50 CFR 20

The Migratory Bird Treaty Act is intended to protect birds that have common migration patterns between the United States and Canada, Mexico, Japan, and Russia. It regulates the harvest of migratory birds by specifying the mode of harvest, hunting seasons, bag limits, and other requirements. The Act stipulates that it is unlawful at any time, by any means, or in any manner to "kill . . . any migratory bird."

DOE would be required to consult with the USFWS about potential impacts of the proposed

SNS on migratory birds. In accordance with the USFWS Mitigation Policy, DOE would be required to evaluate ways to avoid or minimize any such impacts during construction and operation of the proposed SNS.

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Bald and Golden Eagle Protection Act	16 USC 668-668d	50 CFR 21-22

The Bald and Golden Eagle Protection Act makes it unlawful to take, pursue, molest, or disturb bald and golden eagles, their nests, or their eggs anywhere in the United States (Sections 668, 668c). A permit must be obtained from the DOI to relocate a nest that interferes with resource development or recovery operations.

No evidence of bald or golden eagle activity has been encountered on the four alternative proposed SNS sites. If bald or golden eagles, their nests, or their eggs appear on the chosen proposed SNS site prior to the initiation of construction-related activities, DOE would be required to obtain a permit for their disturbance or relocation.

6.1.7 CULTURAL AND HISTORIC RESOURCES

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	National Historic Preservation Act	16 USC 470 et seq.	36 CFR 60-61, 63, and 800-812

The National Historic Preservation Act (NHPA) authorizes the Secretary of the Interior to maintain the National Register of Historic Places (NRHP). Under this statute, federal agencies must consider the potential effects of proposed projects on properties listed on or eligible for listing on the NRHP. Section 106 of the NHPA requires the formal review of a proposed action to determine its effects on historic properties. Under this review process, the federal agency must consult with the State Historic Preservation Officer (SHPO) in the state where the action would be implemented as part of an effort to locate possible historic properties and evaluate their NRHP eligibility. If an eligible or listed historic property is identified, the federal agency continues consultation with the SHPO to assess the effect of the proposed action on the property. If the action is determined to have an adverse effect on the property, consultation with the SHPO and Advisory Council on Historic Preservation will usually generate a Memorandum of Agreement containing stipulations that must be followed to mitigate the adverse effects.

The Section 106 review process has been initiated for each of the four alternative proposed SNS sites. It began with reconnaissance-level surveys for cultural resources on and in the vicinity of three alternative sites. Sufficient survey data on the proposed SNS site at ANL already existed prior to the beginning of the EIS process. The surveys at ORNL and BNL have been completed. Only 65 percent of the proposed SNS site and an associated buffer zone at LANL have been surveyed. DOE has initiated required consultations with the SHPOs in Tennessee, New Mexico, Illinois, and New York.

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Archaeo-logical Resource Protection Act	16 USC 470 et seq.	18 CFR 1812, 32 CFR 299, 36 CFR 296, and 43 CFR 7

The Archaeological Resource Protection Act requires a permit for any excavation or removal of archaeological resources from public or Native American lands. Excavations must be undertaken for the purpose of furthering archaeological knowledge in the public interest. Any resources that are removed must remain the property of the United States. If a resource is on land owned by a Native American tribe, then consent must be obtained from the tribe before a permit is issued, and the permit must contain terms or conditions requested by the tribe.

Potential cultural resources dating to the Historic Period (World War I) have been identified on the proposed SNS site at BNL. Prehistoric archaeological resources eligible for listing on the NRHP have been identified on the proposed SNS site at LANL. If the proposed SNS site at BNL is chosen for construction, Phase II archaeological test excavations may be necessary to definitively assess the presence of Historic Period resources eligible for listing on the NRHP. Any necessary mitigation of potentially adverse impacts on NRHP-eligible resources at a proposed SNS site would likely be done through archaeological data recovery operations. These operations would involve the excavation and removal of artifacts. The archaeological testing, excavation, and removal operations would require a permit under the Act. This permit would be issued by DOE.

6.1.8 NATIVE AMERICANS

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Native American Graves Protection and Repatriation Act	25 USC 3001	43 CFR 10

This law directs the Secretary of the Interior to assume responsibilities for repatriation of federal archaeological collections and collections held by museums that are culturally affiliated with Native American tribes and are receiving federal funding. Major actions to be taken under this law include (1) establishing a review committee with monitoring and policy-making responsibilities, (2) developing regulations for repatriation, including procedures for identifying the lineal descent or cultural affiliation needed for claims, (3) overseeing museum programs designed to meet the inventory requirements and deadlines of this law, and (4) developing procedures to handle unexpected discoveries of graves or grave goods during activities on federal or tribal lands.

The provisions of this law would apply to the disposition of artifacts and human remains recovered during data recovery mitigation on the proposed SNS site at LANL, if this site is chosen for construction of the SNS. Remains from the Classic Period sites would be ancestral to the Native Americans at the Pueblo of San Ildefonso. Furthermore, if any inadvertent discoveries of Native American archaeological materials or human remains were to occur during construction or operation of the proposed SNS, their disposition would also be subject to the provisions of this law.

Jurisdiction	Statute	Citation
Federal	American Indian Religious Freedom Act	42 USC 1996

The provisions of the American Indian Religious Freedom Act reaffirm the religious freedom of American Indians under the first amendment to the constitution. The Act establishes a national policy to protect and preserve the inherent and constitutional right of American Indians to believe, express, and exercise their traditional religions. The Act requires that federal actions avoid interfering with access to sacred locations and traditional resources that are integral to the practice of religion.

Prehistoric cultural resources eligible for listing on the NRHP have been identified on the proposed SNS site at LANL. In addition, traditional cultural properties (TCPs) may occur on and adjacent to the site. If this site is chosen for construction of the proposed SNS, DOE would consult with the four accord tribes in the area (Pueblos of Cochiti, Jemez, Santa Clara, and San Ildefonso) concerning the occurrence of TCPs and cultural resources, mitigation of potential impacts on these resources, and other issues relating to the American Indian Religious Freedom Act.

Jurisdiction	Statute	Citation
Federal	Indian Sacred Sites	Executive Order 13007

Executive Order 13007 applies to agencies within the executive branch of the federal government that have statutory or administrative responsibility for managing federal lands that may contain American Indian sacred sites. A sacred site is defined as "…any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site."

To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, DOE must accommodate access to and ceremonial use of Indian sacred sites on DOE lands by Indian religious practitioners. In addition, DOE must avoid adversely affecting the physical integrity of sacred sites and, where appropriate, maintain the confidentiality of such sites. Section 2 of this executive order requires the implementation of procedures to meet these requirements. Where practicable and appropriate, these procedures must ensure reasonable notice of proposed actions or land management policies that may restrict future access to or ceremonial use of sacred sites or adversely affect the physical integrity of such sites.

This executive order would be applicable to any sacred sites that might be identified on the proposed SNS site at LANL through consultations with American Indian tribal groups. No such sites are known to be present on the proposed SNS sites at ORNL, ANL, and BNL.

6.1.9 NOISE

Jurisdiction	Statute	Citation
Federal	Noise Control Act	42 USC 4901 et seq.

Section 4 of the Noise Control Act directs all federal agencies to carry out their programs in

ways that promote an environment free of noise that jeopardizes human health and welfare.

6.1.10 HEALTH AND SAFETY

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Occupational Safety and Health Act	29 USC 651 et seq.	29 CFR 1910

The Occupational Safety and Health Act establishes standards to enhance safe and healthful working conditions in places of employment throughout the United States. The Act is administered and enforced by the OSHA, an agency under the U.S. Department of Labor. While both OSHA and EPA have a mandate to reduce exposures to toxic substances, the OSHA jurisdiction is limited to safety and health conditions that exist in the workplace. The Act requires each employer to furnish its employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employees have a duty to comply with the OSHA standards and all rules, regulations, and orders issued under the Act.

The OSHA regulations establish specific standards that inform employers what must be done to achieve a safe and healthful working environment. This set of regulations establishes OSHA requirements for employee safety in a variety of working environments. It addresses employee emergency and fire prevention plans (29 CFR 1910.38), hazardous waste operations and emergency response (29 CFR 1910.120), and hazard communications (29 CFR 1910.1200). These rules enable employees to be aware of the dangers they face from hazardous materials in their workplace.

DOE emphasizes compliance with these regulations at facilities such as the proposed SNS. The contractor and subcontractor employees who work at such facilities must comply with the regulations applicable to their work, as prescribed through DOE orders. DOE keeps and makes available the various records of minor illnesses, injuries, and work-related deaths required by the OSHA regulations.

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Federal Aviation Act of 1958	49 USC 1504	14 CFR 77

The FAA requires a permit for any structure greater than 200 ft (61 m) in height that would affect navigable airspace. A permit would be required for structures at the proposed SNS site greater than 200 ft (61 m) in height. Construction cranes used at the proposed SNS site could require a permit.

Jurisdiction	Order Number	Order Title
Federal	Executive Order 12898	Environmental Justice

Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

6.1.11 ENVIRONMENTAL PROTECTION

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	National Environmental Policy Act	42 USC 4321 et seq.	40 CFR 1500–1508

The National Environmental Policy Act (NEPA) establishes a national policy promoting awareness of the consequences of human activity on the environment and consideration of environmental impacts during the early planning and decision-making stages of federal projects.

Under the provisions of NEPA, federal agencies are required to assess the potential effects of their major proposed actions on the environment.

This FEIS has been prepared in response to NEPA policies, regulatory requirements established by the Council on Environmental Quality (CEQ), and the DOE regulations for implementing the procedural provisions of NEPA. It discusses reasonable alternatives and their potential environmental consequences.

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Toxic Substances Control Act	USC 2601 et seq.	40 CFR 761-763

The Toxic Substances Control Act (TSCA) regulates the manufacture, use, treatment, storage, and disposal of certain toxic substances not regulated by RCRA or other statutes. These substances include polychlorinated biphenyls (PCBs) (40 CFR 761) and asbestos (40 CFR 763).

It is expected that the use of these materials in the proposed SNS would be limited or not occur at all. However, if they should be used, compliant programs and procedures would need to be implemented to address appropriate management and disposal of waste generated as a result of their use.

Jurisdiction	Order Number	Order Title
Federal	Executive Order 11514	Protection and Enhancement of Environmental Quality

Executive Order 11514 requires federal agencies to monitor and control their activities continually to protect and enhance the quality of the environment. In addition, it requires the development of procedures to ensure the fullest practicable provision of timely public information and understanding of federal plans and programs with environmental impacts.

6.1.12 EMERGENCY PLANNING AND RESPONSE

		Citation	
Jurisdiction	Statute	Statute	Regulation
Federal	Emergency Planning and Community Right-To-Know Act	42 USC 11001 et seq.	40 CFR 350-372

The Emergency Planning and Community Right-To-Know Act is also referred to as Title III of the Superfund Amendments and Reauthorization Act. This statute requires the owners and operators of facilities with hazardous substances to engage in emergency planning. In addition, they must notify their communities and government agencies about the storage, use, and release of hazardous substances at their facilities. Under Subtitle A of this statute, owners and operators must develop and maintain inventories of hazardous substances stored and used at their facilities. These inventories and information on releases of the substances must be reported to state emergency response authorities and the Local Emergency Planning Committee. This reporting is designed to ensure that emergency plans are sufficient to respond to unplanned releases of hazardous substances.

Hazardous substances may be used and stored at the proposed SNS. The host national laboratory for the proposed SNS would be required to fold the inventory and release information on these substances into its Emergency Planning and Community Right-to-Know Act reporting processes.

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Comprehensive Environmental Response, Compensation, and Liability Act	42 USC 9601 et seq.	40 CFR 300-302

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its implementing regulations provide the needed general authority for federal and state governments to respond directly to hazardous substance incidents. The regulations require reporting of spills, including releases of radioactive materials, to the National Response Center.

DOE would be required to comply with these regulations if hazardous materials spills occur during construction and operation of the proposed SNS. Programs for the development of internal procedures to implement the CERCLA regulations are generally set forth in DOE orders.

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Hazardous Materials Transportation Act	49 USC 5101 et seq.	49 CFR 172

The requirements for marking, labeling, placarding, and documenting shipments of hazardous materials are presented in these regulations under the Hazardous Materials Transportation Act. In addition, they specify the requirements for providing hazardous materials information and training. Any hazardous materials shipped from the proposed SNS would be required to comply with these regulations.

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Atomic Energy Act of 1954	42 USC 2011 et seq.	10 CFR 30.72, Schedule C

This regulation is used by the public and private sector to determine if an emergency response plan must exist for unscheduled releases of radiological materials. It is one of the threshold criteria documents for DOE Emergency Preparedness Hazards Assessments required by DOE Order 151.1, *Comprehensive Emergency Management System*. An emergency response plan addressing the proposed SNS operations would need to be prepared in accordance with this regulation.

Jurisdiction	Statute	Citation	
		Statute	Regulation
Federal	Reorganization Plan No. 3 of 1978, Public Health and Welfare	42 USC 5121 et seq.	44 CFR 1-399

These regulations set forth the policies, procedures, and responsibilities of DOE, the Federal Emergency Management Agency, and the Nuclear Regulatory Commission (NRC) for implementing a Federal Emergency Preparedness Program, including radiological planning and preparedness. An emergency response plan, including radiological planning and preparedness for proposed SNS operations, would need to be prepared and implemented at the SNS in accordance with these requirements.

6.2 DOE REQUIREMENTS

DOE controls its operations through various sets of federal regulations and DOE orders covering a wide range of subjects. The regulations and DOE orders applicable to construction and

operation of the proposed SNS are described in this section.

6.2.1 REGULATIONS

DOE regulations address wide-ranging areas such as environmental management, administrative requirements and procedures, energy conservation, nuclear safety, and classified information. For the purposes of this FEIS, regulations relevant to the proposed action include 10 CFR 20, *Dose Limits for Individual Member of the Public*; 10 CFR 820, *Procedural Rules for DOE Nuclear Facilities*; 10 CFR 830, *Nuclear Safety Management—Contractor and Subcontractor Activities*; 10 CFR 835, *Occupational Radiation Protection*; 10 CFR 1021, *Compliance with NEPA*; and 10 CFR 1022, *Compliance with Floodplains/Wetlands Environmental Review Requirements*.

DOE has established occupational radiation protection standards to protect DOE personnel and contractor employees. These standards are set forth in the regulations under 10 CFR 835. These regulations establish standards, limits, and program requirements to protect individual workers from ionizing radiation that may be generated by DOE activities. These activities include, but are not limited to, the construction and operation of DOE facilities. The requirements under 10 CFR 835 would apply to construction and operation of the proposed SNS. The radioactive material storage and handling operations at the proposed SNS would be required to comply with these regulations.

6.2.2 DOE ORDERS

DOE orders contain statements of departmental policies, as well as the procedures and requirements necessary for implementing them.

A large number of DOE orders apply to implementation of the proposed action described in this FEIS.

Hazardous materials storage and handling operations conducted under the proposed action would be required to comply with DOE Order 5480.4, *Environmental Protection, Safety, and Health Protection Standards*, and DOE Order 5480.7A, *Fire Protection*. These two orders require DOE and its contractors to comply with the National Fire Protection Association codes and standards, the OSHA regulations in 29 CFR 1910, and the DOE Explosives Safety Manual.

Additional DOE orders applicable to construction and operation of the proposed SNS are listed in Table 6.2.2-1.

Table 6.2.2-1. DOE orders applicable to the proposed action.

DOE Order	Title
151.1	Comprehensive Emergency Management System
225.1	Accident Investigations
231.1	Environment, Safety, and Health Reporting
232.1	Occurrence Reporting and Processing of Operations Information
420.1	Facility Safety
430.1	Life-Cycle Asset Management
440.1	Worker Protection Management for DOE Federal and Contractor Employees
441.1	DOE Radiological Health and Safety Policy
441.2	Extension of DOE Order 441.1
451.1A	National Environmental Policy Act Compliance Program
460.1A	Packaging and Transportation Safety
460.2	Departmental Materials and Packaging Management
470.1	Safeguards and Security Program
471.1	Identification and Protection of Unclassified Controlled Nuclear Information
471.2A	Information Security Program
472.1B	Personnel Security Activities
1300.2A	Department of Energy Technical Standards Program
1360.2B	Unclassified Computer Security Program
3790.1B	Federal Employee Occupational Safety and Health Program
4330.4B	Maintenance Management Program
4700.1	Project Management System
5400.1	General Environmental Protection Program
5400.3	Hazardous and Radioactive Mixed Waste Program
5400.5	Radiation Protection of the Public and the Environment
5480.17	Site Safety Representatives
5480.19	Conduct of Operations Requirements for DOE Facilities
5480.21	Unreviewed Safety Requirements
5480.22	Technical Safety Requirements
5480.23	Nuclear Safety Analysis Reports
5480.25	Safety of Accelerator Facilities
5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements
5630.12A	Safeguards and Security Inspection and Evaluation Program
5632.1C	Protection and Control of Safeguards and Security Interests
5700.6C	Quality Assurance
5820.2A	Radioactive Waste Management
6430.1A	General Design Criteria

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